



UNITED STATES PATENT AND TRADEMARK OFFICE

[Signature]
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/805,824

03/22/2004

Tieyu Zheng

111079-135672

1482

25943

7590

08/03/2006

SCHWABE, WILLIAMSON & WYATT, P.C.
PACWEST CENTER, SUITE 1900
1211 SW FIFTH AVENUE
PORTLAND, OR 97204

EXAMINER

GOLUB, MARCIA A

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/805,824

Applicant(s)

ZHENG, TIEYU

Examiner

Marcia A. Golub

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 16-24 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 16-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because it is not descriptive of the invention. Correction is required. See MPEP § 608.01(b).

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 6, 8, 23, 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Watts et al. (6,729,143) hereinafter '143.

Regarding **claim 1**, Fig 9 of '143 discloses "an optoelectronic apparatus comprising:

a substrate [11] having a stepped surface having a lower and an upper portion;
a thermal electric cooler (TEC) disposed on the lower portion of the stepped surface of the substrate, the TEC having a plurality of elongated TEC elements [33] disposed substantially in parallel between a top [32] and a bottom [34] portion of the TEC, the top portion [32] of the TEC having a top planar surface that is substantially orthogonal to the TEC elements [33];

and a laser light source [12] disposed on the top planar surface [32] of the TEC."

Regarding **claims 6, 8, 23, 24**, Fig 9 of '143 discloses an optoelectronic apparatus as described above:

6. "wherein the apparatus further comprises a selected one of a driver and an

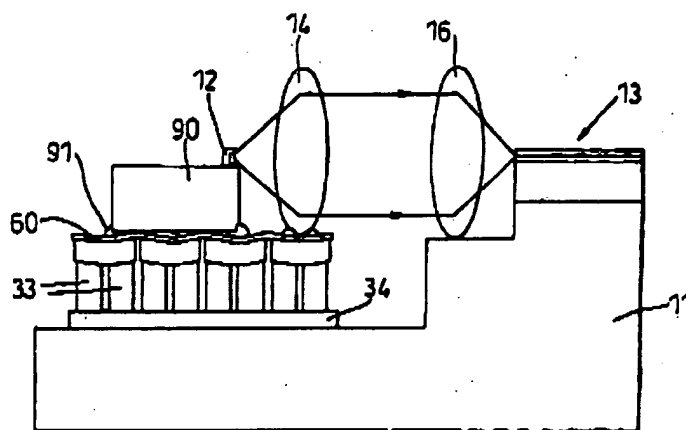
Art Unit: 2828

amplifier [13, 15] disposed on an upper portion of the stepped surface of the substrate [11], and coupled to the laser light source [12]";

8. "wherein the laser light source [12] comprises a laser diode device";

23. "wherein said laser light source [12] is disposed on the top planar surface of the top portion [32] of the TEC to emit light bundles in a direction parallel to the top planar surface";

24. "wherein said laser light source [12] is disposed directly on the top planar surface of the top portion [32] of the TEC" (Fig 8)



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over '143 as applied to claim 1 above, and further in view of Acklin et al. (6,778,576) hereinafter '576.

Fig 9 of '143 discloses an optoelectronic apparatus as described above but does not disclose a ceramic substrate and a mirror. However, Fig 1 of '576 discloses:

2. "wherein the substrate [2] comprises a ceramic material" (4/61);

9. "wherein the apparatus further comprises a laser light steering mirror [17]

Art Unit: 2828

subassembly disposed on the thermal electric cooler [25], adjacent to the laser light source [5] to redirect the light bundles emitted by the laser light source to a direction substantially orthogonal to the top planar surface [2]."

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of '576 into the device of '143 by making the ceramic substrate for at least the purpose of dissipating heat, and by incorporating a light steering mirror next to a laser for at least the purpose of placing the assembly in a laser package.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over '143 and '576 as applied to claim 2 above.

'143 and '576 disclose an optoelectronic apparatus as described above, but do not disclose:

3. "wherein the ceramic material comprises a selected one of aluminum nitride, alumina, and beryllium oxide".

These materials/elements are known in the art to be used with lasers.

It would have been obvious to one of ordinary skill in the art at the time of the invention to make the laser of these known materials/elements, since it has been held to be within the general skill of a worker in the art to select a known material/element on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960).

Claims 4, 7, 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over '143 as applied to claim 1 above, and further in view of Stewart et al. (2003/0043868) hereinafter '868.

Fig 9 of '143 discloses an optoelectronic arrangement as described above but does not disclose inclosing the apparatus in a laser package. However, TO laser packages are well known in the art and are disclosed in '868:

4. "wherein the substrate [102] comprises a plurality of vias [holes for pins 104] to facilitate routing of electrical connections to the thermal electric cooler.

7. "wherein the substrate [102] comprises a plurality of vias [holes for pins 104] to facilitate routing of electrical connections to the selected one of the driver and the amplifier"
10. "wherein the apparatus further comprises an overhanged welding ring [102] disposed around the substrate";
11. "wherein the apparatus further comprises a cap [301] with an optical window [304] to cover the laser light source [106] and the thermal electric cooler";
12. "wherein the optical window [304] comprises a flat glass window." (paragraph 0032)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of '868 into the device of '143 by incorporating the optical module inside a TO laser package for at least the purpose of mass producing the laser.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over '143 and '868 as applied to claim 1 above.

'143 and '868 disclose an optoelectronic apparatus as described above, but do not disclose:

5. "wherein the thermal electric cooler comprises a T-shaped bottom portion."
- However, Fig 7 of '868 discloses making the top plate [502] of the TEC in a T shape.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of '143 and '868 by making the bottom plate of the TEC in a T shape for at least the purpose of accommodating the optical module inside the package.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2828

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

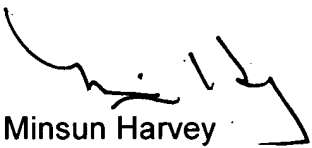
Contact Info

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcia A. Golub whose telephone number is 571-272-8602. The examiner can normally be reached on M-F 9-6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marcia A. Golub
Assistant Examiner
Art Unit 2828



Minsun Harvey
Supervisor
Art Unit 2828

MAG